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ABSTRACT

Developing effective communication for the physically handicapped child involves establishing a communication system which comprises many nonspeech modes as well as intelligible speech. The child can develop communication readiness skills as the parents develop an attachment between parent and child, acknowledge the child's methods of communication other than speech, help the child interact with objects, talk to the child, and give the child opportunities to make choices. Communication systems can be gestural or gestural-assisted in nature. Gestural systems are described as those communication systems in which the sender communicates by motion of body parts. Gestural-assisted systems are described as those systems which require external assistance to communicate; such systems can be non-electronic or electronic. The pamphlet concludes with a list of information sources and manufacturers. (JDD)

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Developing EFFECTIVE COMMUNICATION

for the physically handicapped child

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DEVELOPING EFFECTIVE COMMUNICATION
for the physically handicapped child

The physically handicapped child often is unable to communicate effectively. Parents may find their child trapped in a world of frustration, with their only outlet being tears or temper tantrums. When effective communication methods are developed, satisfaction sets in not only for the child but also for the parents and everyone concerned.

Your child may be an infant, a speaking child whose sounds are sometimes misunderstood, a speaking child whose words are not understood, or a nonspeaking child whose sounds do not resemble speech but who may occasionally produce a recognized word. Regardless, *it is never too early or too late to begin developing effective communication.*

Effective communication relies on establishing a *communication system*; it is much more than just the ability to produce intelligible speech. A communication system comprises many nonspeech modes and may include eye contact, facial gestures, body gestures, yes-no responses, pointing, vocalizations such as "uh-uh," picture boards, electronic systems, and more, as well as intelligible speech.

You may be concerned that adding nonspeech modes to your child's communication system will reduce your child's attempts at speech. On the contrary, research demonstrates that to do so seems to facilitate speech.

Developing effective communication for a physically handicapped child is best accomplished through a team approach. You and your child are the most important members of the team. Other team members can be the physician, speech-language pathologist, physical therapist, occupational therapist, and teacher. These are the people who can appraise your child's potential and tell you what nonspeech modes are available and how to finance equipment.

Taking into account what you hope will be your child's potential, realistically consider what your child has to work with. Look for the help available to you. With that help, you can begin to custom design a communication system for your child.

Interactive Behavior and Readiness Skills

Effective communication depends on how a child interacts with other people and with the environment. You can help your child get ready to interact in ways that will make the child an effective communicator.

This is the time to recognize and acknowledge your child's methods of communication other than speech. Early expressions such as rejection, refusal, acceptance, and choice are indicated by a child in whatever nonspeech mode of communication the child has available—from an expression that leaves no doubt, to one that is barely heard or seen.

The child's readiness skills need to be evaluated and developed. This step can be accomplished by the team. The parents are especially helpful because of their close contact with the child. Parents will need to train themselves to watch for any clues that their child is ready to interact—or is in fact interacting.

Not all of the various readiness skills need to be developed before your child can become an effective communicator. Some readiness skills, such as those based on hearing or sight, may be precluded because of the nature of the child's handicap.

How your child is positioned is the most important readiness skill. When attempts to interact with your child seem to be thwarted because of the child's physical limitations, a more appropriate positioning may bring about surprising results.

A physical therapist or an occupational therapist can help you learn positions that will let your child's body achieve full potential.

Readiness skills begin with bonding, the reassuring physical attachment between parent and child. The newborn's first language experiences begin with cuddling, holding, talking, singing. During these times of face-to-face play, you and your child can establish *eye contact*—the basic communication mode for visual attention, for tracking and following; or *voice-to-ear contact*—the basic communication mode for listening skills. Either or both of these contacts, which are the results of bonding, are important readiness skills in developing imitation skills.

Another readiness skill is developed through *object interaction.* A physically handicapped child may not be able to actively explore the environment. To help your child develop the necessary skills for learning about the world, you may need to give extra guidance and general assistance with object play and manipulation.

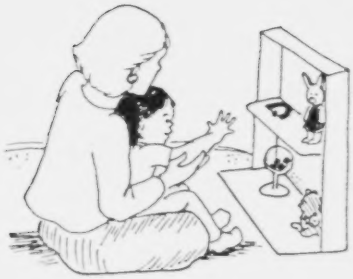
An atmosphere of *verbal expression* also creates readiness skills. Talk to your child. Positive and encouraging thoughts about whatever is happening need to be spoken. Keep the words coming.

Every contact you have with your child is an opportunity for repetitious imitation. Even though the child may not "talk back," the child may be listening.

Choice making also is a readiness skill. In the very early stages of development, a child can be encouraged to make choices. Choice can be indicated by some form of body gesturing toward a particular item—by looking at it, reaching for it, touching it, pointing at it, or vocalizing about it. Be alert to your child's clues. As soon as you can detect the child's choice, it is important to reinforce it.

Give your child a chance to make a choice while feeding or dressing and during toy play. Present only two objects or toys at a time. Always use simple language ("Rattle, here's the rattle"; or simply "ball" as you point to the toy). When your child looks at the object, touches it, or reaches for the toy, reinforce the action by saying, "You want the rattle" or "Here's the ball" as you give the toy to the child.

Make an object vest to wear when you play with your child. It will allow you to keep your hands free for play. Fasten two plastic baggies, large enough to put a toy into, to a piece of cardboard that you can hang around your neck with string. As you play with your child, present the toys and engage your child in choice making.



An object box is another easy-to-make aid. Place each toy in a separate area of the box. By pointing to the desired toy, or by looking at it and then looking at you, your child can indicate a choice. Always give the toy and verbally praise your child immediately when choice making has occurred.

Battery-operated toys and computers can help develop the *cause-effect* readiness skill. Your child may not have the fine motor control to directly activate toys; but when a switch is connected to the toy, the child may easily be able to make the car go or the toy man climb a ladder.

The switch should be custom designed for the child, accommodating whatever part of the body the child can use. The team can decide which body part or parts your child can use most effectively.

Battery-operated toys can be purchased already adapted with a switch, or you can adapt the toy yourself. Push switches, paddle switches, joysticks, pneumatic switches, eye-controlled switches, optical switches, sound controlled switches—all can be activated by a child's finger, hand, elbow, arm, shoulder, upper body, foot, toe, leg, mouth, eye, jaw, or cheek.

Switches also are useful for such things as record players, thermostats and fans, computers, and electronic communication systems.

Cause-effect readiness skills are easily acquired on a child-friendly computer system. It's never too early to introduce your child to a computer. It is an excellent long-term tool for you and your child, not only for developing communication skills but also for general educational growth.

Gestural Systems

Gestural systems are those communication systems in which the sender communicates by motion, using the face, head, hands, arms, or other parts of the body.

These systems do not require aids or devices but they do require gross motor skills—the ability to use the muscles involved, and imitation skills—the ability to imitate.

A disadvantage to using a gestural system is that your child can "talk" only to people who understand the gestures. Another problem is that the gestural system is useful only in face-to-face situations. When no one is there to receive the message, the system can't be used; and so the child needs to learn other systems for situations that are not face-to-face.

On the plus side, generally there is no cost (unless you are paying instructors to teach the system). If the child cannot make the gesture clearly, a modified gesture can be used. Gestural systems can be adapted readily, and vocabulary can be increased quickly by creating new signs as they are needed. And because gestural systems do not require aids or devices, they are mobile—they go along with the child so long as someone who understands the gestures is there.

There are several types of gestural systems, which include early systems, sign language, educational sign systems, and gestural language codes.

Early systems are natural gestures, pantomime, eye blinks (for *yes* and *no*), and pointing.

Children who are severely/multiply handicapped can be trained to use eye-blinking responses. Usually one blink means *no* and two blinks mean *yes*.

You can shape the child's natural gestures into communication. For example, when your child puts a hand in the mouth, you can say "eat" and reinforce the word by giving the child something to eat.

The child also learns gesturing from songs and games like pat-a-cake and peek-a-boo.

Gestural Assisted Systems

Gestural assisted systems are those systems which require external assistance—an aid or a device—to communicate. They can be nonelectronic or electronic.

All gestural assisted systems use pictures, words, or other symbols alone or in combination. Some gestural assisted systems are relatively cost-free; others are expensive. Some require switches or other adaptations. They range in size from portable to those that are difficult to transport.

With a gestural assisted system your child can talk to more people. However, vocabulary will be limited by the amount of space on the system.

Gestural assisted systems can increase educational potential, generalization of ideas, and attention by focusing. They improve reading skills and generally increase a child's knowledge about the world.

Indicating a Message

A child can indicate a message in a number of ways. One way is to look at or point to a desired object. This method is called *direct selection* (directly selecting an object or a picture to convey a message). For example, looking at or pointing to a glass may mean *drink*; pointing to a picture of a toilet may mean *bathroom.*

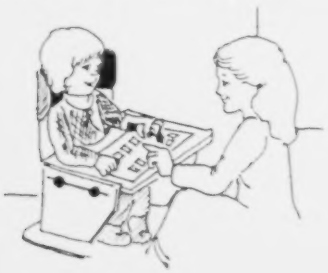
Finger control may not be possible in the beginning, but your child may be able to look toward an object or picture to indicate a message.

Sometimes when you see your child looking toward an object, you may not know exactly which item the child is indicating. Head pointers and light pointers help define exactly where the child is looking. With proper positioning, a child with limited head control may be able to use them.

Head pointers and light pointers can be homemade or

commercially purchased. Prentke Romich Company, Jim's Instrument Manufacturing, Inc., Crestwood Company, and Adaptive Communication Systems, Inc., are some companies that sell these.

Some children who can point by using an isolated finger or a whole hand still are unable to point accurately enough to clearly indicate a message. Adaptive pointers that attach to the hand can be custom designed. Seek assistance from an occupational therapist when considering this method.



Help your child develop pointing skills by playing with bubbles, clay, telephones, finger painting, and cassette players.

A child may use all three of these pointing devices—the head pointer when operating the keyboard on a computer, a light pointer, and an adaptive pointer when indicating a message on a communication aid or device.

Your child may not be able to directly select a message because of physical limitation. Sometimes a child is able to make eye contact but cannot focus the eyes long enough on an object or picture for another person to determine the message. In that case, the *scanning* technique can be useful. You scan the choices; your child, watching the scanning, will signal when a choice is made. Hitting a switch is one way the child can indicate a choice. Or the child could do the scanning by hitting a switch until the desired message is reached or by actively directing an indicator toward a choice.

Scanning techniques are slower than direct selection, but they can be used by severely handicapped children.

Encoding is another way to indicate a message. This technique relies on a code between the message sender and the message receiver. For example, you and your child can decide that when the child first looks at you and then looks at a toy, the message is "I want you to play with me with that toy"; but when your child looks only at the toy, the message is "I want to play alone with that toy."

Encoding systems can be part of the child's aided system. Because space is limited on that type of system, you will want to create additional space. One way is to add notebooks of different colors that are coded to the system. Then, for example, when your child looks at the color blue on the "main board," that would mean the message is in the blue notebook.

Encoding systems are faster than scanning systems but usually require more physical control and a great deal of planning.

Symbol Selection

All gestural assisted systems require symbols. Symbols can be objects (miniature or actual size), informal symbols (photographs, line drawings, writing, or printed words), or formal symbols (such as Blissymbols, Picsysms, or Pictogram Idiogram Communication). Symbols can be handmade or purchased (such as *Peel & Put* by Communication Skill Builders, and *Touch and Talk* by Imaginart).

There is no established developmental order in choosing symbols for a system because each child's ability to see and respond is different. Generally, photographs are the easiest symbols to introduce.

Because no one symbol set contains all vocabulary, it is best to combine symbol sets, using photographs, colored and black-and-white line drawings, printed words, and "formal" systems.

Print the word in lower case letters above the symbols. This helps others to know exactly what word the symbol means, and it helps your child with pre-reading skills.

Nonelectronic Systems

Children are ready for symbols to be introduced at a developmental age level of twelve to eighteen months. Even earlier, you can begin teaching your child to look toward a symbol on an object board or vest. As the child matures, you can introduce picture boards while feeding, toileting, or playing.

A mealtime board can be made easily from photo album inserts. These pages have sticky backgrounds, and the peel-away see-through cover protects your symbols from food spills and drool. To keep your hands free, tie a piece of string through the holes and place the board around your neck. Use photos or line drawings of a bottle and a spoon for *drink* and *eat* or symbols for *more* and *all done*. Start with two large pictures, and add more pictures later.

Mealtime books can be created from photo albums or looseleaf notebooks. They are useful for teachers, baby sitters, and others who are not as familiar with your child as you are. The book can show favorite foods and drinks and can explain how your child indicates the need for a break or that the meal is finished. Use photos, line drawings, and magazine pictures along with written explanations.

Play boards can show favorite toys. Use words such as *more*, *all done*, and *another toy* with symbols. Later, add verbs (such as *roll* and *pop* if the toys are ball and bubbles). A speech-language pathologist can help you select symbols for abstract words.

During toileting is another good time for language facilitation. Use words such as *diaper*, *wet*, *potty*, and *all done*. For variety, make a mobile of symbols pasted onto shapes of animals, and hang it above the changing table.

As your child develops skills for communicating, picture-symbol boards can be designed to teach English syntax. Place symbols for subjects, verbs, and objects (the *boy throws* the *ball*) in that order. A symbol or combination of symbols could represent an expression.

Here are some other board ideas:

- Pocket notebooks
- Communication vests
- Lap trays
- Plexiglas boards
- Eye-gaze boards
- Commercially available boards
- Song boards (favorite songs with pictures)
- Story boards (favorite stories with pictures)
- Boards with large tabs for easy turning
- Boards with Velcro so pictures and objects can be changed easily

Consider the size of the board. Small boards can be carried in the pocket, hung around the neck, attached to a key ring, or placed in a holster.

Consider the shape and weight, if the board is not attached to the child's chair. Also consider the size and placement of the pictures.

Boards can be adapted for visually handicapped children by using Braille and other raised symbols, distinctive textures, fluorescent drawings, and large pictures.

Electronic Systems

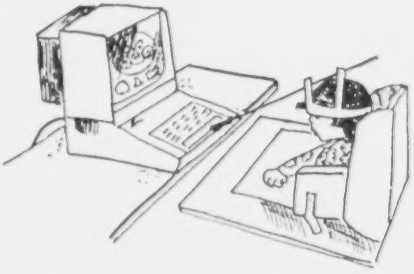
When a child uses any electronic system, independence increases.

Finding the right electronic system for your child will take time. The system you choose should benefit your child now and in the future. It must be able to grow with the child, to mature as the child matures. You need to rely on the team to help you decide which system is best for your child.

Electronic systems range in price from $50 to $4000. Funding is available, so base your decision on how the system works for your child. Enquire about the latest techniques.

There may be an Assistive Device Resource Center located in your State. Evaluation and intervention techniques and technical assistance are provided at these centers.

As with any system, an electronic system should be only a part of your child's total communication system. There may be times when the electronic system needs charging or repair. You will be glad then to have a picture/symbol board which has been kept up-to-date and used so frequently that your child has not forgotten how to use it.



Electronic systems work either by direct selection or by scanning. Some systems require touch, and the amount of pressure may vary. A finger, the whole hand, another part of the body, or a head stick may be used. Some systems use optical head pointers. Others use switches; and in that case, the same switch your child uses when playing with toys may be suitable.

Computers are classified as systems that are not portable. A computer is an important aid for your child and can be introduced when the child is very young. Please seek advice before purchasing a computer, however.

Numerous software programs are available for children with physical handicaps at bookstores, computer stores, and through catalogs. Unless a program has been recommended by someone who is familiar with it, be sure to examine it before you buy it.

Some early educational software programs include:

Juggle's Rainbow (The Learning Company)

StickyBear Opposites and *StickyBear ABCs* (Weekly Reader Family Software)

Muppet Discovery Disk and *Teddy's Playground* (Sunburst Communications)

Touch Window (Window Ware, Personal Touch Corporation)

First Words and *First Verbs* (Laureate Learning Systems)

The Apple series computers often are recommended for physically handicapped children because of their software programs, access to switches, and specialized hardware (such as expanded keyboards for children who cannot use traditional keyboards). Other computers, such as the Commodore, may adequately meet your child's needs.

Touch and Tell is an early training device manufactured by Texas Instruments. It is a toy with voice output. The child touches the panel to activate it. The device uses overlays that train a child to understand words by categories (parts of the body, counting, shapes, and toy names).

Electronic communication aids include:

Light Talker, Touch Talker, IntroTalker (Prentke Romich Company)

Epson EvalPAC, SpeechPAC (Adaptive Communication Systems, Inc.)

Zygo Board (Zygo Industries, Inc.)

Wolf (AdamLab)

Sonoma Voice (Sonoma Developmental Center)

VOIS 136 (Phonic Ear)

Perfecting any skill—whether it is in sports or music, or even learning to drive a car—is a matter of practice. It is important for your child to practice communication skills. Keeping this practice going on a daily basis is often very hard on parents. Some days you may feel discouraged. Remember that it is normal to make mistakes, but often it is by finding out what *doesn't* work that we learn what *does* work.

Talk over your expectations and your problems with other members of the team. One day you will be surprised to discover how effective a communicator your child has become!

Sources of Information

Literature

Asha
American Speech-Language-Hearing Association
10801 Rockville Pike
Rockville, MD 20852

Augmentative and Alternative Communication
Williams & Wilkins
428 East Preston Street
Baltimore, MD 21202

Communication Outlook
Artificial Language Laboratory
405 Computer Center
Michigan State University
East Lansing, MI 48824-1042

The Exceptional Parent
PsyEd Corporation
605 Commonwealth Avenue
Boston, MA 02215

Klein, Marsha Dunn. 1988. *Pre-Sign Language Motor Skills.* Tucson: Communication Skill Builders.

Musselwhite, Caroline Ramsey. 1986. *Adaptive Play for Special Needs Children.* San Diego: College-Hill Press.

Manufacturers

Adamlab
Wayne County School District
33500 Van Born Rd./P.O. Box 807
Wayne, MI 48184

Adapted Toys
Linda J. Burkhardt
8503 Rhode Island Avenue
College Park, MD 20740

Adaptive Communication Systems, Inc.
Box 12440
Pittsburg, PA 15231

Creative Switch Industries
P.O. Box 5256
Des Moines, IA 50306

Crestwood Company
P.O. Box 04606
Milwaukee, WI 53204-0606

Don Johnston Developmental Equipment
981 Winnetka Terrace
Lake Zurich, IL 60047

Imaginart
25680 Oakwood Street/P.O. Box 1969
Idyllwild, CA 92349

JIM (Jim's Instrument Manufacturing, Inc.)
P.O. Box 5157
Coralville, IA 52241

Steven E. Kanor, Ph.D., Inc.
Toys for Special Children
8 Main Street
Hastings-on-Hudson, NY 10706

Laureate Learning Systems
110 E. Spring Street
Winooski, VT 05404

The Learning Company
545 Middlefield Rd.
Menlo Park, Ca 94025

Personal Touch Corporation
4320 Stevens Creek Blvd.
San Jose, CA 95129

Phonic Ear
250 Camino Alto
Mill Valley, CA 94941

Prentke Romich Company
1022 Heyl Road
Wooster, OH 44691

Sonoma Developmental Center
P.O. Box 1493
Eldridge, CA 95431

Sunburst Communications
39 Washington Ave.
Pleasantville, NY 10570

Weekly Reader Family Software
4343 Equity Drive/P.O. Box 16754
Columbus, OH 43216

Zygo Industries, Inc.
P.O. Box 1008
Portland, OR 97207

Other Sources

Center for Special Education Technology
Council for Exceptional Children
1920 Association Drive
Reston, VA 22091

Disabled Children's Computer Group
2095 Rose Street
1st Floor East
Berkeley, CA 94709

Trace Center
314 Waisman Center
1500 Highland Avenue
Madison, WI 53706

Notes

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